

REMARKS

Claims 1-13 are pending in this application. By this amendment, claim 1 is amended and new claim 13 is added. No claims have been cancelled or withdrawn. No new matter is added. Accordingly, favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

I. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects claims 1-12 under 35 U.S.C. § 103(a) as being obvious over Obae et al. (WO 02/02643; English-language equivalent US 2004/0053887 relied upon as translation) (hereinafter “Obae”) in view of Yaginuma (JP 01-272643) (“Yaginuma-1”), Yaginuma (JP 02-084401) (“Yaginuma-2”), Yaginuma et al. (JP 03-264537) (“Yaginuma-3”), Kennedy et al. (Journal of the European Ceramic Society, 1997) (“Kennedy”), and Ek et al. (US 5,607,695) (“Ek”). The rejection is respectfully traversed.

In response to the last Office Action mailed July 22, 2010, Applicants explained that Yaginuma references have particle structures completely different from the claimed porous cellulose aggregate structure. In addition, Applicants explained that the claimed porous cellulose aggregate may have a large pore volume within a particle by mixing two or more cellulose dispersion particle groups having different average particle sizes.

In response to Applicants’ response, the outstanding Office Action acknowledges that Yaginuma references do not disclose the claimed porous cellulose aggregate structure, but asserts that cellulose particles of Obae have a secondary aggregate structure as claimed in the present application. The Office Action, at page 7, further asserts that Yaginuma references were cited to show that it would have been obvious for one of ordinary skill in the art to change the physical properties of the cellulose particles of Obae through routine experiment, such as altering the concentration of HCl, temperature and duration of stirring, and the solids content prior to spray drying. In addition, the Office Action notes that neither the shape of the cellulose particle group having a larger average particle size nor the difference in average particle size between the groups of primary cellulose particles are claimed in the present application.

By this amendment, independent claim 1 is amended to recite “[a] porous cellulose aggregate having a secondary aggregate structure formed by aggregation of primary cellulose particles consisting of cellulose dispersion particle groups (A) and (B), wherein the cellulose dispersion particle group (A) has an average particle size of 10-110 µm and a shape with a ratio (L/D) of 2.0 or more, where L is an average length of a major diameter of the cellulose particles and D is an average length of a minor diameter of the cellulose particles, the cellulose

dispersion particle group (B) has an average particle size of 0.01-0.7 times the average particle size of the cellulose dispersion particle group (A), and a weight ratio of (A):(B) is from about 5:95 to about 95:5, the aggregate having a pore volume within a particle of 0.265 cm³/g to 2.625 cm³/g, containing type I crystals, and having an average particle size of more than 30 µm and 250 µm or less, a specific surface area of 1.3-12.5 m²/g, a repose angle of 25° or more and less than 44° and properties to disintegrate in water.” The Examiner is referred to paragraphs [0114] to [0116] of the specification for antecedent support. The applied references, either alone or in combination, would not have rendered obvious all of the features recited in independent claim 1 at least for the following reasons.

As explained at page 6 of Applicants' previous response, by mixing two or more cellulose dispersion particle groups having different average particle sizes, a large pore volume within a particle may be provided. When the cellulose dispersion is dried, the cellulose dispersion particles having a smaller average particle diameter enter among the cellulose dispersion particle ingredient having a larger average particle size to form a secondary aggregate structure. See *Specification at paragraph [0115]*. In addition, where L is the average length of the major diameter of the particles and D is the average length of the minor diameter of the particles, the larger an L/D ratio (i.e. L/D ratio of 2.0 or more), the more profoundly excessive particle aggregation is inhibited at the time of drying, and the larger the pore volume within a particle. See *Specification at paragraph [0017]*. Therefore, a larger L/D ratio contributes in providing a larger pore volume within a particle. *Id.* Furthermore, the pore volume value of the claimed aggregate of the present application can be controlled by a suitable weight ratio of particles with different size. See *Specification at paragraph [0016]*.

In addition to the examples presented in Applicants' previous response, respective L/D ratios are measured and presented below to describe the mechanism described above.

Table I:

Example #	Cellulose Dispersion Particles (A)		Cellulose Dispersion Particles (B)	Weight Ratio (A):(B)
	Average L/D Ratio	Average Particle Size (µm)	Average Particle Size (µm)	
Example 1	3.4	55	5 (0.100 times of (A))	50:50
Example 2	3.4	55	3 (0.550 times of (A))	40:60
Example 3	3.4	55	8 (0.145 times of (A))	60:40
Example 4	5.0	82	5 (0.061 times of (A))	50:50
Example 5	5.0	82	3 (0.037 times of (A))	90:10
Example 6	2.9	36	5 (0.139 times of (A))	50:50
Example 7	2.4	30	1 (0.033 times of (A))	10:90
Example 8	13.0	102	22 (0.216 times of (A))	50:50

- A: Cellulose particle group having a larger average particle size
- B: Cellulose particle group having a smaller average particle size
- L: Average length of the major diameter of particles
- D: Average length of the minor diameter of particles

The Office Action fails to provide any suggestion or basis for concluding that the combinations of Yaginuma references and Obae, or in various other combinations with other references, describe or suggest the combinations of above-indicated parameters which are required for designing the claimed porous cellulose aggregate with a large pore volume, as positively claimed in independent claim 1. Therefore, claim 1 would not have been rendered obvious by the combinations of Yaginuma references and Obae, in various other combinations with other references. Claims 2-12 also would not have been rendered obvious by either alone or by various combinations of the cited references for at least their dependence on independent claim 1, as well as for the additional features they recite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. NEW CLAIM 13

New dependent claim 13 is added by this amendment. Claim 13 depends from independent claim 1. Thus, claim 13 is also nonobvious and patentable over various combinations of the cited references at least for the above-identified reasons with respect to independent claim 1, as well as for the additional features it recites.

For example, claim 13 recites "the porous cellulose aggregate ... obtained by drying the cellulose dispersion particle groups having water as a medium," as described at least in paragraphs [0110] and [0113] of Applicants' specification. In contrast, the cited references do not describe water as an available medium. In fact, page 234, left lower column, lines 2-6 of Yaginuma-3 teaches away from using water as a medium by describing that water is not appropriate for preparing a cellulose particle of Yaginuma-3. Therefore, cellulose particles of the cited references cannot reasonably be considered to correspond to the claimed porous cellulose aggregate prepared in a different manner.

Accordingly, favorable consideration and prompt allowance of new dependent claim are respectfully requested.

III. Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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